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EXAMINER	
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ART UNIT	**PAPER NUMBER**
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/715,466	NAITO, TAKAHIRO	
	Examiner	Art Unit	
	Curtis B. Odom	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 May 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,5-7 and 10-12* is/are rejected.

7)☐ Claim(s) *2-4, 8, and 9* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-12 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 5, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bachl et al. (previously cited in Office Action 2/28/2007) in view of Shimzu (US 2003/0035467).

Regarding claim 1, Bachl et al. discloses a decoding apparatus (Fig. 1) comprising:

reception means for receiving data on a dedicated physical control channel (see Fig. 1, Despread DPCCH, see section 0034) and data on a dedicated physical data channel (see Fig. 1, Despread DPDCH, see section 0034), which are coded into a complex channelization code of a single system which is to be transmitted as an uplink signal (see section 0034) from a mobile unit to a base station (see section 0005) in a 3GPP (3rd generation) communication (cell phone) system, wherein the control channels include TFCI information (see section 0037) and the

information on the control channels is coded with a complex in-phase (I) and quadrature (Q) multiplexed code as described in section 0034;

TFCI decoding characteristic feedback means (Fig. 1, blocks 7, 8, 9, and 10) for determining TFCI decoding characteristics such as the most likely transmitted TFCI (see section 0047 and 0060) of a coded TFCI code on the dedicated physical control channel; and

dedicated physical data channel correcting means (see Fig. 1, multiplication of output of 2nd channel estimation) for performing data compensation (correction) using a channel estimation (see section 0062) for the dedicated physical data channel on the basis of a determination result on the TFCI decoding processing (see section 0066), wherein the TFCI decoding processing improves the channel estimates used to compensate (correct) the data of the physical data channel.

Bachl et al. does not disclose the TFCI decoding characteristic feedback means uses quadrature correlation characteristics of the quadrature code to determine TFCI decoding characteristics.

However, Shimzu discloses using quadrature correlation characteristics of a quadrature code obtained by a Hadamard transform (see sections 0037-0038, wherein it is the understanding of the Examiner that applying the quadrature code to a Hadamard transform obtains quadrature correlation characteristics as described in the instant specification page 16, lines 21-25). These quadrature correlation characteristics shown in the matrices of section 0039-0052) are used to determine TFCI decoding characteristics such as the most likely transmitted TFCI represented by the largest result of the matrix (see section 0051). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the device of Bachl et al. to use

quadrature correlation characteristics of the quadrature code of the received signal to determine TFCI decoding characteristics as disclosed by Shimzu since Shimzu states when the TFCI is decoded by a Hadamard transform, the state of the transmission channel multiplexing of the received user data can be detected (see section 0055).

Regarding claim 5, the claimed apparatus includes features corresponding to the above rejection of claim 1, which is applicable hereto.

Regarding claim 6, Bachl et al. discloses a decoding method comprising:

the first step of receiving data on a dedicated physical control channel (see Fig. 1, Despread DPCCH, see section 0034) and data on a dedicated physical data channel (see Fig. 1, Despread DPDCH, see section 0034), which are coded into a complex channelization code of a single system which is to be transmitted as an uplink signal (see section 0034) from a mobile unit to a base station (see section 0005) in a 3GPP (3rd generation) communication (cell phone) system, wherein the control channels include TFCI information (see section 0037) and the information on the control channels is coded with a complex in-phase (I) and quadrature (Q) multiplexed code as described in section 0034;

the second step (Fig. 1, blocks 7, 8, 9, and 10) for determining TFCI decoding characteristics such as the most likely transmitted TFCI (see sections 0047 and 0060) of a coded TFCI code on the dedicated physical control channel; and

the third step (see Fig. 1, multiplication of output of 2nd channel estimation) for performing data compensation (correction) using a channel estimation (see section 0062) for the dedicated physical data channel on the basis of a determination result on the TFCI decoding

processing (see section 0066), wherein the TFCI decoding processing improves the channel estimates used to compensate (correct) the data of the physical data channel.

Bachl et al. does not disclose using quadrature correlation characteristics of the quadrature code to determine TFCI decoding characteristics.

However, Shimzu discloses using quadrature correlation characteristics of a quadrature code obtained by a Hadamard transform (see sections 0037-0038, wherein it is the understanding of the Examiner that applying the quadrature code to a Hadamard transform obtains quadrature correlation characteristics as described in the instant specification page 16, lines 21-25). These quadrature correlation characteristics shown in the matrices of section 0039-0052) are used to determine TFCI decoding characteristics such as the most likely transmitted TFCI represented by the largest result of the matrix (see section 0051). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the method of Bachl et al. to use quadrature correlation characteristics of the quadrature code of the received signal to determine TFCI decoding characteristics as disclosed by Shimzu since Shimzu states when the TFCI is decoded by a Hadamard transform, the state of the transmission channel multiplexing of the received user data can be detected (see section 0055).

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bachl et al. (previously cited in Office Action 2/28/2007) in view of Shimzu (US 2003/0035467) as applied to claim 6, and in further view of Kim et al. (previously cited in Office Action 2/28/2007).

Regarding claim 7, Bachl et al. discloses the second step comprises the step of extracting/separating a TFCI code from received data on a dedicated physical control channel using a split (see Fig. 1) to separate the TFCI code from FBI and TPC received data, TFCI

decoding the TFCI code (see Fig. 1, block 7) and the step of calculating a compensation (correction) value using a channel estimation (see section 0062) for data correction on the dedicated physical data channel, wherein the TFCI decoding processing improves the channel estimates used to compensate (correct) the data of the physical data channel (see section 0066). Bachl et al. and Shimzu do not disclose the decoding of the TFCI comprises obtaining correlation values with a Walsh quadrature vector, and sequentially storing the correlation values, and the step of determining TFCI decoding characteristics from a plurality of stored correlation values.

However, Kim et al. discloses TFCI decoding (see Figs. 9 and 10) which comprises correlating the received signal including the TFCI with Walsh codes (see section 0082), storing the correlation values and comparing the stored values with previously stored correlation values (see section 0084), and determining the TFCI information bits from the comparison (see section 0084). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the decoding of the TFCI of Bachl et al. and Shimzu with the decoding of the TFCI as described by Kim et al. since Kim states the decoding increases error correcting capability (see section 0102).

5. Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bachl et al. (previously cited in Office Action 2/28/2007) in view of Shimzu (US 2003/0035467) as applied to claims 1 and 6, and in further view of Freiberg et al. (previously cited in Office Action 2/28/2007).

Regarding claim 10, which inherits the limitations of claim 1, Bachl et al. and Shimzu do not disclose a reception SIR measuring means for measuring a reception SIR from a known pilot

symbol on the dedicated physical control channel, and the dedicated physical data channel correcting means performs data correction for the dedicated physical data channel on the basis of a determination result on the TFCI decoding characteristics and the measurement result on the reception SIR.

However, Freiberg et al. discloses generating a target reception SIR (see section 0049) of a dedicated physical control channel (DPCCH) based on the decoding of the TFCI and pilot symbols (see section 0047). Freiberg et al. further discloses this reception SIR value is updated by monitoring the channel (see section 0060). The SIR (E_s/N_o) generated from the decoding of the TFCI and pilot symbols is used to correct for rate matching of the data of the (see section 0031-0033) dedicated physical channels (DCH) and power offsets of the dedicated physical data channel (see section 0057). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to provide data rate matching and power offset correction based on an SIR measurement in Bachl et al. and Shimzu as disclosed by Freiberg et al. since Freiberg et al. states adjusting these parameters improves the performance of the system (see section 0004).

Regarding claim 11, Bachl et al. discloses radio base station apparatus (see section 0005) comprising a decoding apparatus (Fig. 1) including:

reception means for receiving data on a dedicated physical control channel (see Fig. 1, Despread DPCCH, see section 0034) and data on a dedicated physical data channel (see Fig. 1, Despread DPDCH, see section 0034), which are coded into a complex channelization code of a single system which is to be transmitted as an uplink signal (see section 0034) from a mobile unit to a base station (see section 0005) in a 3GPP (3^{rd} generation) communication (cell phone) system, wherein the control channels include TFCI information (see section 0037) and the

information on the control channels is coded with a complex in-phase (I) and quadrature (Q) multiplexed code as described in section 0034;

TFCI decoding characteristic feedback means (Fig. 1, blocks 7, 8, 9, and 10) for determining TFCI decoding characteristics such as the most likely transmitted TFCI (see section 0047 and 0060) of a coded TFCI code on the dedicated physical control channel; and

dedicated physical data channel correcting means (see Fig. 1, multiplication of output of 2nd channel estimation) for performing data compensation (correction) using a channel estimation (see section 0062) for the dedicated physical data channel on the basis of a determination result on the TFCI decoding processing (see section 0066), wherein the TFCI decoding processing improves the channel estimates used to compensate (correct) the data of the physical data channel.

Bachl et al. does not disclose using quadrature correlation characteristics of the quadrature code to determine TFCI decoding characteristics or a reception SIR measuring means for measuring a reception SIR from a known pilot symbol on the dedicated physical control channel, and the dedicated physical data channel correcting means performs data correction for the dedicated physical data channel on the basis of a determination result on the TFCI decoding characteristics and the measurement result on the reception SIR.

However, Shimzu discloses using quadrature correlation characteristics of a quadrature code obtained by a Hadamard transform (see sections 0037-0038, wherein it is the understanding of the Examiner that applying the quadrature code to a Hadamard transform obtains quadrature correlation characteristics as described in the instant specification page 16, lines 21-25). These quadrature correlation characteristics shown in the matrices of section 0039-0052) are used to

determine TFCI decoding characteristics such as the most likely transmitted TFCI represented by the largest result of the matrix (see section 0051). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the device of Bachl et al. to use quadrature correlation characteristics of the quadrature code of the received signal to determine TFCI decoding characteristics as disclosed by Shimzu since Shimzu states when the TFCI is decoded by a Hadamard transform, the state of the transmission channel multiplexing of the received user data can be detected (see section 0055).

Freiberg et al. further discloses generating a target reception SIR (see section 0049) of a dedicated physical control channel (DPCCH) based on the decoding of the TFCI and pilot symbols (see section 0047). Freiberg et al. further discloses this reception SIR value is updated by monitoring the channel (see section 0060). The SIR (E_s/N_o) generated from the decoding of the TFCI and pilot symbols is used to correct for rate matching of the data of the (see section 0031-0033) dedicated physical channels (DCH) and power offsets of the dedicated physical data channel (see section 0057). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to provide data rate matching and power offset correction based on an SIR measurement in Bachl et al. and Shimzu as disclosed by Freiberg et al. since Freiberg et al. states adjusting these parameters improves the performance of the system (see section 0004).

Regarding claim 12, which inherits the limitations of claim 6, the claimed method includes features corresponding to claim 10, which is applicable hereto.

Allowable Subject Matter

6. Claims 2-4, 8, and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Curtis B. Odom whose telephone number is 571-272-3046. The examiner can normally be reached on Monday- Friday, 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Curtis Odom
July 21, 2007